

(TM)

Db	121	ckpcdgcffnsetskapcrhthcsvgllltqkgnathnicsgmsesqkcgldvltl	180
Oy	142	cnrcdgcffnsetskapcrhthcsvgllltqkgnathnicsgmsesqkcgldvltl	201
Db	181	ceeafrfayvplkfpnmlsvlvdnlpqtkvnaesverikrqpssqetfgllkvlwqhn	240
Oy	202	ceeafrfayvplkfpnmlsvlvdnlpqtkvnaesverikrqpssqetfgllkvlwqhn	261
Db	241	kdgdlvkklllgldicnsvgrhghnanltteqlrslmeslpqkvaaediektlkcxp	300
Oy	262	kDQDlVKKtIIDDIDICnSVGRhGHNaNltTEQLrSLMESlPqKVaaEDIEKtIKcKp	321
Db	301	sdqllkllslwrlxngqgqdtlkglmalhskethyfpkvtvqsllkctrlfnstfmykly	360
Oy	322	SDQllKLLslWRlXNGGdTLKGLmALHskETHYfpKtVtVqSLlKctrlRFLstfMYkLy	381
Db	361	qklflmglngvqsvklsc1 380	
Oy	382	QKLFEMIGNGVQSVKISCL 401	
AC	AC	R99925 standard: Protein; 401 AA.	
DT	DT	Full-length osteoclastogenesis inhibitory factor.	
DE	DE	Full length osteoclastogenesis inhibitory factor.	
KW	KW	Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;	
OS	OS	Homo sapiens.	
FH	FH	Key	
FT	FT	Peptide	1..21
FT	FT	/note= "Signal peptide"	22..401
FT	FT	Protein	22..401
PN	PN	/note= "Mature OCIF, claim 6"	
PD	PD	29-AUG-1986.	
PF	PF	20-FEB-1996; J00374.	
PR	PR	20-FEB-1995; JP-054977.	
PA	PA	21-JUL-1995; JP-207508.	
PI	PI	(SNOW) SNOW BRAND MILK PROD CO LTD.	
PI	PI	Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;	
PI	PI	Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;	
DR	DR	Wp1; 96-402320/40.	
DR	DR	N-PSDB: T36685.	
PT	PT	DNA encoding osteoclastogenesis inhibitory factor protein - useful	
PT	PT	for bone resorption control, esp. treatment of osteoporosis	
PS	PS	Disclosure: Page 64-66; 183pp; Japanese.	
CC	CC	This sequence represents the full length osteoclastogenesis inhibitory	
CC	CC	factor (OCIF) of the invention. The OCIF has a molecular weight by	
CC	CC	SDS-PAGE of 60 kD under reducing conditions and 120 kD under non-	
CC	CC	reducing conditions. The protein is adsorbed onto cation-exchangers	
CC	CC	or heparin and its activity is lowered after 10 mins at 70 deg.C or	
CC	CC	30 mins at 56 deg.C, and is lost after 10 mins at 90 deg.C. OCIF is	
CC	CC	useful in the control of bone resorption and therefore in the	
CC	CC	treatment and prevention of disorders of bone resorption, e.g.	
CC	CC	osteoporosis.	
CC	CC	Sequence 401 AA;	
CC	CC		

	Query Match	100.0%	Score 2861	DB 20	Length 401
	Best Local Similarity	100.0%	Pred. No. 1,206-278		
	Matches 380	Conservative 0	Mismatches 0	Indels 0	Gaps 0
Db	22 etfpkpykhydeetsbqglcdkcpkpylylkhsctakwktvcapcdpytdasvntdecl	81			
Oy	22 ETFPKYHYDEETSBNHQLCDKCPPGITLYKHCNKAKKTVACAPCDPYTIDSWNTSECL	81			
Db	82 ycsprvckelgyvkgecarthnrveeckegryleiefclkhscppgyfvgvaqgtpenrv	141			
Oy	82 YCSPRVCKELGYVKGCARTHNRVCECKEGRYLEIEFCLKHSRCPPGYFVGVAQGPENRV	141			
Db	142 ckrcpddgffsnetsskacrcrkhtncsvrgllltqkymathnicsgnsestqkqgldvtl	201			
Oy	142 CKRCDDGFFSNETSSKACRKRHTNCVSGLLLTQGNATHNICSGNSESTQKQGDIVTL	201			

Dd	202	ceeaftfayvctkftpmuylsvlnlpgtkmaesvarkrbhsqgqtfqllkhlwbn	261
Qy	202	CEEAFFRFAVPTKFTPMULSVVLNLPETKMAESVERIKRQHSQDQOTQLKLMNBN	261
Dd	262	kddqivkklldqldlcmenvgrhlgbanltfegqrsjmesjpskkyaaedteklixkcp	321
Qy	262	KDDQIVKKTIIODIDLCENSVGRH LGHANLPETQRJLSMESJPGKKVGAEDIEKTIKCKP	321
Dd	332	sdqqlklislsvrtnkgdcdctkglmbhalnksktyhfkvtvqtsikckirflhsftmykly	381
Qy	332	SDQQLKLISLVRTNKGDODCTKGLMHALNKSHTYHFKVTYQTSIKCKIRFLHSFTMYKLY	381
Dd	362	qklflemimgnvgsyvklscl	401
Qy	362	QKLFLEMIMGNOVGSYKLSCL	401

ID	Query Match	Best Local Similarity	Matches	Conservative	Mismatches	Indels	Gaps	Score	DB	Length	401
Db	22 etfppkyihygeetshqllcdkcpptgrylkhctakktvcapopdhyvdswhstdecl 81	99.5%;	379;	0;	1;	0;	0;	2847;	20;	401;	
Qy	22 ETFPPKYIHYGEETSHQLCDKCPPTGYLKHCTAKKTVCAPOPDHYVDSWHTSDECL 81	99.7%;	379;	0;	1;	0;	0;	3.39e-277;	20;	401;	
Db	82 ycsprckelqgvkdegcnthnrveckeegryljetefclkhtrscpgfgyvgaqtpentv 141	99.5%;	379;	0;	1;	0;	0;	2847;	20;	401;	
Qy	82 YCSPRCKELQGVKDEGCNTHNRVCECKEGRYLJETEFCLKHKRSCPGFGVGAQTPENTV 141	99.7%;	379;	0;	1;	0;	0;	3.39e-277;	20;	401;	
Db	142 ckrcpdpffsnetsskapcrkhtncsvfglldtkgnathndlcsngsesctqkcgldvcl 201	99.5%;	379;	0;	1;	0;	0;	2847;	20;	401;	
Qy	142 CKRCPDPFFSNETSSKAPCRKHTNCVFGLLDTKGNATHNDLCSNGSESTQKCGLDVCL 201	99.7%;	379;	0;	1;	0;	0;	3.39e-277;	20;	401;	

```

OY 142 CRKCPDGFENETSSKAPCRKHTNCVFGILLTKGNATHDNICSGNSESTOKCGIDVTL 201
DB 202 seeaffrfavptkftfnwlsvldnlpqtkvnaesverikrqhsgeqtfqllklykhn 261
OY 202 CEBAFFRFVAVPTKFTFNWLSVLVDNLPQTKVNAESVERIKRQHSOEOFTQLKLMKHQN 261
DB 262 kdddlvkkllqgdldleensvqrhlgnaulfteqrlsimeslpgkkygaedlektlckp 321
OY 262 KDODIYKKTIIQDIDLCENSVQRHIGHANLTFEQLRSIMESLPKRYGAEDIKTIKACKP 321
DB 322 sdqllkllslwrkngdgtlkglmhalksktyhfpkvtvgsllkttirflhsftmkyly 381
OY 322 SDQILLKLSWRKNGDQDTLKGMLHALKSKTYHFPKVTYQSLKTIIRLHSFTMYKLY 381
DB 382 qkllflemignqgsvkisc1 401
OY 382 OKLFLEMIGNOVSVKISCL 401

JULT 4
AC R99931 standard; Protein: 401 AA.
AC R99931;
DE 22-APR-1997 (first entry)
DE Mutated OCIF, OCIF-C19S.
KM Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;
KW osteoporosis.
OS Synthetic.
FH Key Location/Qualifiers
FT Peptide 1..21
FT /note= "Signal peptide"
FT Protein 22..401
FT /note= "Mature OCIF-C19S"
FT MISC-difference 195
FT /label= C19S
PN WO9626217-A1.
PD 29-AUG-1996.
PF 20-FEB-1996; J00374.
PR 20-FEB-1995; JP-054977.
PR 21-JUL-1995; JP-207508.
PA (SNOW) SNOW BRAND MILK PROD CO LTD.
PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
PI WPI; 96-402320/40.
DR N-PSDB; T33161.
DR DNA encoding osteoclastogenesis inhibitory factor protein - useful
PT for bone resorption control, esp. treatment of osteoporosis
PS Claim 29; Page 94-96; 183pp; Japanese.
PS This sequence represents a mutated version of the full length
PS osteoclastogenesis inhibitory factor (OCIF) of the invention. This
PS sequence represents OCIF-C19S in which the 19th Cys residue in the
PS mature OCIF protein is substituted by Ser. The OCIF of the invention
PS has a molecular weight by SDS-PAGE of 60 kD under reducing conditions
PS and 120 kD under non-reducing conditions. The protein is adsorbed onto
PS cation-exchangers or heparin and its activity is lowered after 10 mins
PS at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
PS deg.C. OCIF is useful in the control of bone resorption and therefore
PS in the treatment and prevention of disorders of bone resorption, e.g.
PS osteoporosis.
SQ Sequence 401 AA;

Query Match 99.5%; Score 2847; DB 20; Length 401;
Best Local Similarity 99.7%; Pred. No. 3.39e-277;
Matches 379; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

```

```

OY 142 CRKCPDGFENETSSKAPCRKHTNCVFGILLTKGNATHDNICSGNSESTOKCGIDVTL 201
DB 202 seeaffrfavptkftfnwlsvldnlpqtkvnaesverikrqhsgeqtfqllklykhn 261
OY 202 CEBAFFRFVAVPTKFTFNWLSVLVDNLPQTKVNAESVERIKRQHSOEOFTQLKLMKHQN 261
DB 262 kdddlvkkllqgdldleensvqrhlgnaulfteqrlsimeslpgkkygaedlektlckp 321
OY 262 KDODIYKKTIIQDIDLCENSVQRHIGHANLTFEQLRSIMESLPKRYGAEDIKTIKACKP 321
DB 322 sdqllkllslwrkngdgtlkglmhalksktyhfpkvtvgsllkttirflhsftmkyly 381
OY 322 SDQILLKLSWRKNGDQDTLKGMLHALKSKTYHFPKVTYQSLKTIIRLHSFTMYKLY 381
DB 382 qkllflemignqgsvkisc1 401
OY 382 OKLFLEMIGNOVSVKISCL 401

RESULT 5
ID R99931 standard; Protein: 401 AA.
AC R99931;
DE 22-APR-1997 (first entry)
DE Mutated OCIF, OCIF-C21S.
KM Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;
KW osteoporosis.
OS Synthetic.
FH Key Location/Qualifiers
FT Peptide 1..21
FT /note= "Signal peptide"
FT Protein 22..401
FT /note= "Mature OCIF-C21S"
FT MISC-difference 277
FT /label= C21S
PN WO9626217-A1.
PD 29-AUG-1996.
PF 20-FEB-1996; J00374.
PR 20-FEB-1995; JP-054977.
PR 21-JUL-1995; JP-207508.
PA (SNOW) SNOW BRAND MILK PROD CO LTD.
PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;
PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
PI WPI; 96-402320/40.
DR N-PSDB; T33163.
DR DNA encoding osteoclastogenesis inhibitory factor protein - useful
PT for bone resorption control, esp. treatment of osteoporosis
PS Claim 35; Page 98-100; 183pp; Japanese.
PS This sequence represents a mutated version of the full length
PS osteoclastogenesis inhibitory factor (OCIF) of the invention. This
PS sequence represents OCIF-C21S in which the 21st Cys residue in the
PS mature OCIF protein is substituted by Ser. The OCIF of the invention
PS has a molecular weight by SDS-PAGE of 60 kD under reducing conditions
PS and 120 kD under non-reducing conditions. The protein is adsorbed onto
PS cation-exchangers or heparin and its activity is lowered after 10 mins
PS at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90
PS deg.C. OCIF is useful in the control of bone resorption and therefore
PS in the treatment and prevention of disorders of bone resorption, e.g.
PS osteoporosis.
SQ Sequence 401 AA;

Query Match 99.4%; Score 2843; DB 20; Length 401;
Best Local Similarity 99.2%; Pred. No. 8.80e-277;
Matches 377; Conservative 2; Mismatches 1; Indels 0; Gaps 0;

```

Db	142	ckcgcdgffsnstscakpcrkhtnscvflilrtqkgnatbhdicagngnestckgldvrl	201
Oy	142	CKRCDEGFFSNSTSSKAPCRKHTNCSVFELLRTQGNATHDICSNGNSTCKGIDVTL	201
Db	202	ceeaiffavpckfpnwslvldnlpjtkvnaesverlkrghssegcfqlklkwkbn	261
Oy	202	CEEAFFFAVPCKFPNWSLVLDNLPCKVNAESVERIKRGHSSEGEQFLKLWKBN	261
Db	262	kdgdlvkklllgldlslsensvgrhghaoltfcqlrslmeslpjgkvygaedlcktlackp	321
Oy	262	KQDVLVKRLIDIDICENSVRHGHANTFEQLSLMESLPGKVGADIEKTLACKP	321
Db	322	sdqllklslslwrlkngdggqlkglmhalckshktyhfpkvtqslkklrflntflmykly	381
Oy	322	SDQILKLSSLWRLLKNGDGGQLGLMHALKSHKSTYHPKVTQSLKTLRFLNLSFMYKLY	381
Db	382	qklflflemlgnqyqsvklscsl	401
Oy	382	QKLFLFLEMIGNQYQSVKLSCL	401
DLT	6		
ID	R99942	standard; Protein; 399 AA.	
AC	R99942		
DT	23-APR-1997	(first entry)	
DE	Mutated OCIF, OCIF-CL.		
KW	Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption; osteoporosis.		
KV			
OS	Synthetic.		
PH	Key	Location/Qualifiers	
FT	Peptide	1..21	
FT	/note= "Signal peptide"		
FT	Protein	22..399	
FT	/note= "Mature OCIF-CL"		
PN	MO9626217-AL.		
PD	29-AUG-1996		
PR	20-FEB-1996; J00374		
PR	20-FEB-1995; JP-054977.		
PR	21-JUL-1995; JP-207508.		
PA	(SNOW) SNOW BRAND MILK PROD CO LTD.		
PI	Gocho M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;		
PI	Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;		
DR	WPI: 96-402320/40.		
DR	N-FSDB: T331172.		
PT	DNA encoding osteoclastogenesis inhibitory factor protein - useful		
PT	for bone resorption control, esp. treatment of osteoporosis		
PS	Claim 62; Page 117-119; 183bp; Japanese.		
PS	This sequence represents a mutated version of the full length		
PS	osteoclastogenesis inhibitory factor (OCIF) of the invention. This		
PS	sequence represents OCIF-CL in which amino acids 379-380 of the		
CC	mature OCIF protein are deleted. The OCIF of the invention		
CC	has a molecular weight by SDS-PAGE of 60 kd under reducing conditions		
CC	and 120 kd under non-reducing conditions. The protein is adsorbed onto		
CC	cation-exchangers or heparin and its activity is lowered after 10 mins		
CC	at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90		
CC	deg.C. OCIF is useful in the control of bone resorption and therefore		
CC	in the treatment and prevention of disorders of bone resorption, e.g.		
CC	osteoporosis.		
CC	Sequence 399 AA:		
CC			

	Query Match:	99.3%	Score 2840:	DB 20:	length 399:
	Best Local Similarity 100.0%:	Pred. No. 1,806-276:			
	Matches 3/8:	Conservative 0:	Mismatches 0:	Indels 0:	Gaps 0
Db	22 etfpbkylhygaeeteahgllldckppgytlkhchtaekwtvcapcdpyhytdswhtsdeci	81			
Qy	22 ETFPbkYlHIDeETSHoLLCDKCPeGtYlLKoHCTAKMTVCAPCDpHYtYDTSWHTSDeCL	81			
Db	82 ycsprckelgyvqgcenrtmrvceckeegrylelefcikhrscpgfgvvaqgperntv	141			
Qy	82 YCSPrCKELQYVQGCENrTMrvceCKEeGRylelEFCLKhrSCpGFGVvAQGPERnTV	141			
Db	142 ckrpcdgffsnetsekapcrkhntcvsfgllltqgnathnlcsngsestqkcgidvlt	201			

QY	142	CKRCDDGFNSMSTSKACRKHHTKNSVFGILLTLQKGNATHNITCSGSESRQKGDIVTL	201
Db	202	ceeafrfaavptkfrpmwlsrlyvnhlpgtknaesverikrqhsgeqtfqllklykqgm	261
QY	202	CEEAFFRFAVPTKFRPMWLSVNDLPETKVNAESVERIKRQHSQOTFOLLKMHQON	261
Db	262	kddqdvkxliqgdidicensvgrhlyghanihtfeqrlsrimesjprgklyvgaedietkikacxp	321
QY	262	KDQDVKRKIODIDICENSVORHIGNHNLTFEORSLMESJPRGKVAEDIEKTIKACXP	321
Db	322	sddqilklisrlwrlngdgdtklgimhalbksrtyhfbpkyvqsikccirflhsftmly	381
QY	322	SDQILKLISRLWRKNGDGTTLGIMHALBKSRTYHFBPTYVQSILKTIIRFLHSFTMYLY	381
Db	382	qrlflemimgvqvsvkys	399
QY	382	QRLFLEMIMGNOVQSVKYS	399

RESULT	7	
ID	R99934	standard; Protein; 401 AA.
AC	R99934.	
DT	22-APR-1997	(first entry)
DE	Mutated OCIF, OCIF-C22S.	
KW	Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;	
KW	osteoporosis.	
OS	Synthetic.	
FH	Key	Location/Qualifiers
FT	Peptide	1..21
FT	/note= "Signal peptide"	
FT	protein	22..401
FT	/note= "Mature OCIF-C22S"	
FT	Misc-difference	277
FT	/label= C22S	
PN	W09626217-A1.	
PD	29-AUG-1996.	
PF	20-FEB-1996; J00374.	
PR	20-FEB-1995; JP-054977.	
PA	21-JUL-1995; JP-207508.	
PI	(SNOW) SNOW BRAND MILK PROD CO LTD.	
PI	Goto M, Higashio K, Kobayashi F, Mochizuki S, Morioka T;	
PI	Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;	
DR	WPI: 96-402320/40.	
DR	N-PSDB: T33164.	
PT	DNA encoding osteoclastogenesis inhibitory factor protein - useful	
PT	for bone resorption control, esp. treatment of osteoporosis	
PS	Claim 38; Page 100-102; 13pp; Japanese.	
CC	This sequence represents a mutated version of the full length	
CC	osteoclastogenesis inhibitory factor (OCIF) of the invention. This	
CC	sequence represents OCIF-C22S in which the 22nd Cys residue in the	
CC	mature OCIF protein is substituted by ser. The OCIF of the invention	
CC	has a molecular weight by SDS-PAGE of 60 kD under reducing conditions	
CC	and 120 kD under non-reducing conditions. The protein is adsorbed	
CC	cation-exchangers or heparin and its activity is lowered after 10 min	
CC	at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90	
CC	deg.C. OCIF is useful in the control of bone resorption and therefore	
CC	in the treatment and prevention of disorders of bone resorption, e.g.	
CC	osteoporosis.	
SO	Sequence	401 AA;

	Query Match	99.3%	Score 2841	DB 20	Length 400
	Best Local Similarity	99.5%	Pred. No. 1.42e-276		
	Matches	378	Conservative	1	Mismatches 1; Indels 0; Gaps 0
Db	22 etfppkylhygeetsbglldckppgyilkhbctakwtvcapcdhytatswtsdecl	81			
QY	22 Etfppkylhygeetsbglldckppgyilkhbctakwtvcapcdhytatswtsdecl	81			
Db	82 yspavckelqyvkgcncrthrvycekqgrylefclkhscppgfyavagapertnt	141			
QY	82 YSPAVCKELQYVKGCNCRTHRVYCEKQGRYLEFCLKHSPPGFYAVAGAPERNTV	141			

Dd	142	ckrcpddgffsfnetscakpcrkhntcsvglllltqkgnathnicsgnsesctqkcgldvcl	201
Oy	142	ckrcpddgffsfnetskakpcrkhntcsvglllltqkgnathnicsgnsesctqkcgldvcl	201
Dd	202	ceeaftfayvctkfpmlslvndlpbtknaesverikrqhsagctfglllhwphn	261
Oy	202	ceeaftfayvctkfpmlslvndlpbtknaesverikrqhsagctfglllhwphn	261
Dd	262	kqgdvkkllsiddicmcsvgrhghnaltfeqtrslmesipgkkygaedteklkaskp	321
Oy	262	kqgdvkkllsiddicmcsvgrhghnaltfeqtrslmesipgkkygaedteklkaskp	321
Dd	322	sdqllnlslsrwknqgdqclkglmhalkskcyhfpkvtvqslkkttrflhsftmykly	381
Oy	322	sdqllnlslsrwknqgdqclkglmhalkskcyhfpkvtvqslkkttrflhsftmykly	381
Dd	382	qklflemgngvgsyklisc	401
Oy	382	qklflemgngvgsyklisc	401
RESULT	8		
ID	R99935	standard; Protein; 401 AA.	
AC	R99935.		
DT	22-APR-1997	(first entry)	
DE	Mutated OCIF, OCIF-C23S.		
KW	Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;		
KW	osteoporosis.		
OS	Synthetic.		
FM	Key	Location/Qualifiers	
FT	Peptide	1..21	
FT	/note= "Signal peptide"	22..401	
FT	/note= "Mature OCIF-C23S"		
FT	Misc-difference	400	
FT	/label= C23S		
PN	WO9626217-A1.		
PD	29-AUG-1996.		
PF	20-FEB-1996; J00374.		
PR	20-FEB-1995; JP-054977.		
PR	21-JUL-1995; JP-207508.		
PA	(SNOW) SNOW BRAND MILK PROD CO LTD.		
PI	Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;		
PI	Nakagawa N, Shima N, Tsuda E, Neda M, Yano K, Yasuda H;		
DR	WPI: 96-402330/40.		
PT	N-PSDE; T33165.		
CC	DNA encoding osteoclastogenesis inhibitory factor protein - useful		
CC	for bone resorption control, esp. treatment of osteoporosis		
CC	Claim 41; Page 103-105; 183pp; Japanese.		
CC	This sequence represents a mutated version of the full length		
CC	osteoclastogenesis inhibitory factor (OCIF) of the invention. This		
CC	sequence represents OCIF-C23S in which the 23rd Cys residue in the		
CC	mature OCIF protein is substituted by ser. The OCIF of the invention		
CC	has a molecular weight by SDS-PAGE of 60 kD under reducing conditions		
CC	and 120 kD under non-reducing conditions. The protein is adsorbed onto		
CC	cation-exchangers or heparin and its activity is lowered after 10 mins		
CC	at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90		
CC	deg.C. OCIF is useful in the control of bone resorption and therefore		
CC	in the treatment and prevention of disorders of bone resorption, e.g.		
CC	osteoporosis.		
CC	Sequence 401 AA;		
CC	50		

	Query Match	99.0%;	Score 2833;	DB 20;	Length 401;
	Best Local Similarity	99.5%;	Pred. No. 9,57E-276;		
	Matches 378;	Conservative	0;	Mismatches 2;	Indels 0; Gaps 0;
Db	22 etfppkylyhydeetsqllcdkcpptylkqhcstakwtvcapcpdytdtswhtsdesl	81			
Qy	22 ETFPPKYLHYDEETSHQLCDKCPPTYLKQHCTAKWTVCAPCPDHYTDTSWHTSDECL	81			
Db	82 ycsprckelqyvgccarltmrarveeckegryllefefclkhscppgfyvgagatprentv	141			
Qy	82 YCSPPCKELQYVGCARLTMRARVEECKEGRYLLEFEFCFKHSCPPGFSVVGAGATPRENTV	141			

Db	142	ckrpdgffsmetskskpcrhtxcsvfgllltckgnatnhdicsgnsestcqkcglavtl	201
Oy	142	ckrcpdgffsmetskskpcrhtxcsvfgllltckgnatnhdicsgnsestcqkcgldvtl	201
Db	202	ceeaaffraybntkftbpnlswlvnblpqtckvnaesverikrqhsgeqtfqllklwkhpn	261
Oy	202	CEEAFFRAYBPVPTKFTPNMLSVLVNDLPQTCKVNAPSVERIKRQHSQEQTFQLLKMWHN	261
Db	262	kdgddvkkliiddidicensvgrhghnallteqrlrsmesipgkkyvaadedtektikscr	321
Oy	262	KDQDVKKLIIDDIDICENSVRHGHANLTFEQRRLSMESIPGKKYVAEDEDTEKTIKCKP	321
Db	322	sdqqlkllslwrkngdqdtkqjlmhalnksctyhfprtyvqsikktirflhsftamkly	381
Oy	322	SDQQLKLLSLWRKNGDQDTKGLMLHALNHSKCTYHFPRTYVQSIIKTIIRFLHSTMIKLY	381
Db	382	qklfiemlgnqgvyskls1	401
Oy	382	QKLFIEMLGNQGVYSKLSCL	401

RESULT	9	
ID	R399948	standard; Protein; 393 AA.
AC	R399948;	
DT	23-APR-1997	(first entry)
DE	Mutated OCIF, OCIF-Cbst.	
KW	Osteoclastogenesis	
KW	Osteoclastogenesis	inhibitory factor; OCIF; heparin; bone resorption;
OS	Synthetic.	
FN	Key	Location/Qualifiers
FT	Peptide	1..21
FT	/note= "Signal peptide"	
FT	protein	22..393
FT	/note= "Mature OCIF-Cbst"	
FT	Misc.difference	392
FT	/label=	Gln371Ileu
FN	W09626217-A1.	
PD	29-AUG-1996.	
PF	20-FEB-1996;	J00374.
PR	20-FEB-1995;	JP-054977.
PR	21-JUL-1995;	JP-207508.
PA	(SNOW) SNOW BRAND MILK PROD CO LTD.	
PI	Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;	
PI	Nakagawa N, Shima N, Tsuda E, Ueda M, Iano K, Yasuda H;	
DR	WP1: 96-402320/40.	
DR	N-PSDB: T33178.	
DR	DNA encoding osteoclastogenesis inhibitory factor protein - useful	
PT	for bone resorption control, esp. treatment of osteoporosis	
PS	Claim 80; Page 126-128; 183pp; Japanese.	
CC	This sequence represents a mutated version of the full length	
CC	osteoclastogenesis inhibitory factor (OCIF) of the invention. This	
CC	sequence represents OCIF-Cbst in which Gln 371 is substituted by	
CC	Ileu and amino acids 373-380 of the mature OCIF protein are deleted.	
CC	These changes are caused by the introduction of a restriction site in	
CC	the DNA encoding this protein. The OCIF of the invention has a	
CC	molecular weight by SDS-PAGE of 60 KD under reducing conditions	
CC	and 120 kD under non-reducing conditions. The protein is adsorbed onto	
CC	cation-exchangers or heparin and its activity is lowered after 10 mins	
CC	at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90	
CC	deg.C. OCIF is useful in the control of bone resorption and therefore	
CC	in the treatment and prevention of disorders of bone resorption, e.g.	
CC	osteoporosis.	
SC	Sequence	393 AA;

	Query Match	Similarity	Score	DB 20:	Length
	Best Local	Similarity	Pred. No.	1.0e-21:	
	Matches	Similarity	Conservative	Mismatches	Indels
Db	22	elfpkylyhydeetsngllcdkcpptygkqkntakwktvcapcdpdytidswhntsecl	81		
Qy	22	ETFPKYLHYDEETSHOLCDKCPGYTKQKCHAKWKTVCAPCDPDHYTDSWNTSECL	81		

Db	82	ycsprxckelgyvkeacemthmrveeckegryllefclckhscpprggyvgaqtprentv	141
Oy	82	YCSPRXCKELGYVKEACEMTHMRVEECKEGRYLEFCLCKHSCPPRGGYVGAQTPRENTV	141
Db	142	ckrcpddgffsnetskacbrchtnccsvfgilltdqkpnathdn:icsgnsestqkcgldvtl	201
Oy	142	CKRCPDGFFSNETSKACBRCHTNCCSVFGILLTDQKPNATHDNTICSGNSESTQKCGIDVTL	201
Db	202	ceeaaffravbtkftpnalsylvdnlpqtkvnaesverikrqhssqgtfqlklvwkqn	261
Oy	202	CEEAFFRAVBTKFTPNALSYLVDNLPQTKVNAESVERIKRQHSQGTFLQLLKWKHQN	261
Db	262	kdgqdvkklidgidolcensvgrh:ghnallfegqlr:imesipgkkyvgaediektlckp	321
Oy	262	KDQDVKKLIIDIDIDICENSVGRH:GHNALLFEGQLR:IMESIPGKKYVGAEDIEKTRKCP	321
Db	322	sdgllklislrirkngddtltkglmahalkshaktbfkvtvqslkkrlirflnshfmykly	381
Oy	322	SDGLLKLISLRIRKNGDDTLTKGLMAHALKSHKTYHFKVTVQSLKKRLIRFLNSHFMYKLY	381
Db	382	qk1flemignlv	393
Oy	382	QKLEFLEMIGNOV	393

RESULT	10	
ID	R99936	standard; Protein; 360 AA.
AC	R99936;	
DT	23-APR-1997	(first entry)
DE	Mutated OCIF, OCIF-DCR1.	
KW	Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption; osteoporosis.	
OS	Synthetic.	
FT	Key	Location/Qualifiers
FT	Peptide	1..21
FT	/note="Signal peptide"	
FT	protein	22..360
FT	/note="Mature OCIF-DCR1"	
FT	Misc_difference	22..23
FT	/note="Position of deletion, delta 2-42"	
PN	W09626217-AL.	
PD	29-AUG-1996;	
PF	20-FEB-1996;	J00374.
PR	20-FEB-1995;	JP-054977.
PR	21-JUL-1995;	JP-207508.
PA	(SNOW) SNOW BRAND MILK PROD CO LTD.	
PI	Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T; Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H; WPI: 96-402320/40.	
PT	WPI: 96-402320/40.	
PT	PSDB: 133166.	
PT	DNA encoding osteoclastogenesis inhibitory factor protein - useful for bone resorption control, esp. treatment of osteoporosis	
PS	Claim 44, Page 105-107; 183pp; Japanese.	
CC	This sequence represents a mutated version of the full length osteoclastogenesis inhibitory factor (OCIF) of the invention. This sequence represents OCIF-DCR1 in which amino acids 2-42 of the mature OCIF protein are deleted. The OCIF of the invention has a molecular weight by SDS-PAGE of 60 kd under reducing conditions and 120 kd under non-reducing conditions. The protein is adsorbed onto cation-exchangers or heparin and its activity is lowered after 10 mins at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90 deg.C. OCIF is useful in the control of bone resorption and therefore in the treatment and prevention of disorders of bone resorption, e.g. osteoporosis.	
CC	Sequence	360 AA;

Query Match	88.7%	Score 2539	DB 20	Length 360
Best Local Similarity	98.3%	Ped. No. 2.64E-245		
Matches 341	Conservative 1	Mismatches 4	Indels 1	Gaps 1

  

Db	15	sikwttg-epcdpdytdswhtsdaclycspvckelgyvkacqrthmrveckegryle	73
55	TAKMTWVACPDPDHYTDSWHTSDCLCSPVCKELQYVKQDCNRTNHRVECKEGRYLE	114	

Db 74 jefclkhscppgfgvnyagfrentvckrcpddffsfnetskskpcrkhhncsvfgjllt 133  
QY 115 IEFCLKHHSCPPGFGVNYAGFPERNTVCKRCPDDFFSNETHSKSKAPCKHHNCVSFGJLLT 174  
Db 134 qknaethdnicsgnsestfqkcgivtlcoeeafifrfavptkftpmwlsvldnjpqtkvna 193  
QY 175 QKGNATHNICSGNSESTQKCGIDVTICEEAFPRFAVPTKFTPMWLSVLDNJPQTKVNA 234  
Db 194 esverikrqhsgqetffllllkvhqmkdqvkhkllqgdlclensvgrhhghnaltfeq 253  
QY 235 ESVERIKRQHSGQETFFLLLLKVNKQNDQVYKHHKLLQGDLCNSVGRHHGHANLTFEQ 294  
Db 254 lrsimesipgkkyvgaediektikackpsdqllllsrlwknqgdtklqumalhskt 313  
QY 295 LRSIMESIPGKKVGAEDIKTIKACKPSDQLLKLLSLMRKNGDQDTLKGMALHRSKT 354  
Db 314 yhfprvtvtsjklkttrfshstfmvkljyglkllemhngvqsvkscl 360  
QY 355 YHFPRVTVTSJKLKTTRFHSHTFMVKLJYGLKLEMHNGVQSVKSCSL 401

ID	RESULT	11
AC	R99943; standard: Protein: 351 AA.	
DT	23-APR-1997 (first entry)	
DE	Mutated OCIF, OCIF-CC.	
KW	Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;	
KM	osteoporosis.	
OS	Synthetic.	
EH	Key	Location/Qualifiers
FT	peptide	1..21
FT	/note="Signal peptide"	
FT	Protein	22..351
FT	/note="Mature OCIF-CC"	
PN	MO9626217-AA.	
PD	29-AUG-1996.	
PF	20-FEB-1996; J00374.	
PR	20-FEB-1995; JP-054977.	
PR	21-JUL-1995; JP-207508.	
PA	(SNOW) SNOW BRAND MILK PROD CO LTD.	
PI	Goto M, Hiasano K, Kobayashi F, Mochizuki S, Morinaga T;	
PI	Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;	
DR	WPI: 96-40320/40.	
DR	NFSDS; T33173.	
PT	DNA encoding osteoclastogenesis inhibitory factor protein - useful	
PT	for bone resorption control, esp. treatment of osteoporosis	
PS	Claim 65; Page 119-121; 183pp; Japanese.	
CC	This sequence represents a mutated version of the full length	
CC	osteoclastogenesis inhibitory factor (OCIF) of the invention. This	
CC	sequence represents OCIF-CC in which amino acids 331-380 of the	
CC	mature OCIF protein are deleted. The OCIF of the invention	
CC	has a molecular weight by SDS-PAGE of 60 kD under reducing conditions	
CC	and 120 kD under non-reducing conditions. The protein is adsorbed onto	
CC	cation-exchangers or heparin and its activity is lowered after 10 mins	
CC	at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90	
CC	deg.C. OCIF is useful in the control of bone resorption and therefore	
CC	in the treatment and prevention of disorders of bone resorption, e.g.	
CC	osteoporosis.	
CC	Sequence 351 AA;	
CC	50	

	Query Match	86.7%	Score 2481	DB 20	Length 351
	Best Local Similarity	100.0%	Pred. No. 2,64e-239		
	Matches	330	Conservative	0	Mismatches 0; Indels 0; Gaps 0
Db	22	etfppkxylhydeetsnqllcdkcpqpyylkbnctakwktvcaapodhytdswhtsdecl	81		
Oy	22	ETFPKRYHYDEETSNOQLCDKCPQGYLYKQNCNAKMTVAAPCPDHYTDSWHTSDECL	81		
Db	82	ycsprckelqyvkgecnrtthrvceckegryllefclkhscppgfygwagpderntv	141		
Oy	82	YCSPRCKELQYVKGECNRTNHRVCECKGRYLELFCLKHSKCPGFGYWAQGPDERNTV	141		

[illegible]

12	standard; Protein; 321 AA.
13	R99949; 23-APR-1997 (first entry)
14	Mutated OCIF, OCIF-CSph.
15	Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;
16	Osteoporosis.
17	Synthetic.
18	Key
19	Location/Qualifiers
20	Peptide 1..21
21	/note= "Signal peptide"
22	Protein 22..321
23	/note= "Mature OCIF-CSph"
24	MO6626217-A1.
25	29-AUG-1996.
26	20-FEB-1996; J00374.
27	20-FEB-1995; JP-054977.
28	21-JUL-1995; JP-207508.
29	(SNOW) SNOW BRAND MILK PROD CO LTD.
30	Goto M, Hiasashio K, Kobayashi F, Mochizuki S, Morinaga T;
31	Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;
32	WPI; 96-402320/40.
33	N-PSDB; T33179.
34	DNA encoding osteoclastogenesis inhibitory factor protein - useful
35	for bone resorption control, esp. treatment of osteoporosis
36	Claim 83; Page 128-129; 18pp; Japanese.
37	This sequence represents a mutated version of the full length
38	osteoclastogenesis inhibitory factor (OCIF) of the invention. This
39	sequence represents OCIF-CSph in which amino acids 298-380 of the mature
40	OCIF protein are replaced by ser-leu-asp. These changes are caused by
41	the introduction of a restriction site in the DNA encoding this protein.
42	The OCIF of the invention has a molecular weight by SDS-PAGE of 60 kD
43	under reducing conditions and 120 kD under non-reducing conditions. The
44	protein is adsorbed onto cation-exchangers or heparin and its activity is
45	lowered after 10 mins at 70 deg.C or 30 mins at 56 deg.C, and is lost
46	after 10 mins at 90 deg.C. OCIF is useful in the control of bone
47	resorption and therefore in the treatment and prevention of disorders
48	of bone resorption, e.g. osteoporosis.
49	Sequence 321 AA;
50	

Query Match	78.0%	Score 2231	DB 203	Length 321
Best Local Similarity 100.0%	Pred. No. 1,84e-213			
Matches 297	Conservative 0	Mismatches 0	Indels 0	Gaps 0
Db	22 etfppkylhydeestshqllcdkcpbgtylkghctakwktvcapcdpyhtdswhntdeci	81		
Qy	22 ETFPPKYLHYDEESTSHQLCDKCPBGTYLKGHCTAKWKTVCAPCPDHYTDSWHNTSECL	81		
Db	82 ycsprvckelqyvkeacnrlhnrvccekegrylelefcclhkrscppgfyvgaatperntv	141		
Qy	82 YCSPRVCKELQYVKACNRLHNRVCECKEGRYLELEFCCLHKRSCPPGFYVGAATPERNTV	141		
Db	142 ckrrpddgffsietsskappcrhrhtcsvrglllltqkgnathnlsagmsestqkglavtl	201		
Qy	142 CKRRPDGFFSIETSSKAPCRHRHTCSVFGLLLTQKGNATHNLTSGMSESTQKGLDVTLL	201		

Db	202	ceafftrfavvktktfpmwslrlyvnhjgktyknaesveriktrqhsqgeqctqglklykwhqn	261
Oy	202	CEEAFFRAVVFKTPTNNLSLVYVNLFGTKYKNAESVRIKROHSSOQOTQTLKLMKHON	261
Dd	262	kqdgivkklldqldlcensvgrhlyghnaltfegjrlsimesjpykkygaedlektika	318
Oy	262	KQDQIVKLLIIDDLCENSVGRHLYGHANLTFEOTJRLSIMESJPGKRYGAEDLEKTIKA	318

ID	RESULT	13
AC	R99937; standard; Protein; 359 AA.	
DT	23-APR-1997 (first entry)	
DE	Mutated OCIF, OCIF-DCR2.	
KW	Osteoclastogenesis Inhibitory factor; OCIF; heparin; bone resorption; osteoporosis.	
OS	Synthetic.	
TH	Key	Location/Qualifiers
FT	Peptide	1..21
FT	/note- "Signal peptide"	
FT	protein	22..359
FT	/note- "Mature OCIF-DCR2"	
FT	Misc.difference 63..64	
FT	/note- "Position of deletion, delta 43-84"	
PN	MO9626217-A1.	
PD	29-AUG-1996.	
PF	20-FEB-1996; J00374.	
PR	20-FEB-1995; JP-054977.	
PR	21-JUL-1995; JP-207508.	
PA	(SNOW ) SNOW BRAND MILK PROD CO LTD.	
PI	Goto M, Iigashio K, Kobayashi F, Mochizuki S,	
PI	Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Morigawa T;	
DR	WPI: 96-402320/40.	
DR	N-PSDB: T33167.	
PT	DNA encoding osteoclastogenesis inhibitory factor protein - useful	
PT	for bone resorption control, esp. treatment of osteoporosis	
PS	Claim 47: Page 107-109; 183pp; Japanese.	
CC	This sequence represents a mutated version of the full length	
CC	osteoclastogenesis inhibitory factor (OCIF) of the invention. This	
CC	sequence represents OCIF-DCR2 in which amino acids 43-84 of the	
CC	mature OCIF protein are deleted. The OCIF of the invention	
CC	has a molecular weight by SDS-PAGE of 60 kD under reducing conditions	
CC	and 120 kD under non-reducing conditions. The protein is adsorbed on	
CC	cation-exchangers or heparin and its activity is lowered after 10 min	
CC	at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90	
CC	deg.C. OCIF is useful in the control of bone resorption and therefore	
CC	in the treatment and prevention of disorders of bone resorption, e.g.	
CC	osteoporosis.	
CC	Sequence 359 AA;	

	Query Match	77.5%	Score 2218;	DB 20;	Length 359;
	Best Local Similarity	89.4%;	Pred. No. 4,064-212;		
	Matches 312;	Conservative	5;	Mismatches 26;	Indels 6; Gaps 6;
Db	15	sikwtctg-ctfppkylhyde-etsnq-llcdk-cpptylikqhstakwktcaeckegry	70		
QY	55	TAKKRTYCAPCPDhY-YTDSWHTSDDELXCSPYCKELQYKOEENRFRHNHRC-ECKEGRY	112		
Db	71	lelefclkhrcspgfyvvgagpberitvckrcpddgfsmetsakpcrkhntcsvgll	130		
QY	113	LEIEFCLKHRCSPGFQVYVQAGTERTVCKRCDDGFFSMETSSKAPCRKHTNCSVGLL	172		
Db	131	ltqkgnathdniscgnssetqkcgldvtlceeaefrfavplktrfnwlsylvdnlpitkv	190		
QY	173	LTOGNATHDNICGNSESTQKCIDVTLCEEAFFRAVPLKFPNNLSLVVNLPEPTKV	232		
Db	191	naesverlkrghssqegtfqilkiwrhqnqgdvkvkldgididcensvgrhishanltf	250		
QY	233	NAESVERTKRKHSSQEGTFOFLKTKMKRQNNDDQVKKIIOIDIDCENSVOGRHIGHANLTF	292		
Db	251	eqllslneslpbkvvgaeidextlckacpsdqilklslvrlnkggddtlkgjlmhalxhs	310		
QY	293	EQLLSLINESLPBGKVVGAEDIEKTKACKPSPQIILKLSLRINKGDDTLKGJLMHALKHS	352		

Db 311 ktyfpkvtvsglkktrflhsfcmkylyhklflemingvgsytkl 359  
 |||||||  
 QY 353 KTYFPKVTVOSLKKTRFLHSFTMKLYKXLFLEMIGNOVOSYKISCL 401

## RESULT 14

ID R9938 standard; Protein; 360 AA.

AC R9938;

DT 23-APR-1997 (first entry)

DE Mutated OCIF, OCIF-DCR3.

KW Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;

OS Osteoporosis.

OS Synthetic.

FT Key

FT Peptide

FT /note="Signal peptide"

FT Protein

FT /note="Mature OCIF-DCR3"

FT Misc.difference 105..106

FT /note="Position of deletion, delta 85-122"

PN W09626217-A1.

PD 28-AUG-1996.

PE 20-FEB-1996; J00374.

PR 20-FEB-1995; JP-054977.

PR 21-JUL-1995; JP-207508.

PA (SNOW) SNOW BRAND MILK PROD CO LTD.

PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;

PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;

DR WPI; 96-402320/40.

DR N-PSDB; T33168.

PT DNA encoding osteoclastogenesis inhibitory factor protein - useful

PT for bone resorption control, esp. treatment of osteoporosis

PS Claim 50, Page 109-111; 183pp; Japanese.

CC This sequence represents a mutated version of the full length

CC osteoclastogenesis inhibitory factor (OCIF) of the invention. This

CC sequence represents OCIF-DCR3 in which amino acids 85-122 of the

CC mature OCIF protein are deleted. The OCIF of the invention

CC has a molecular weight by SDS-PAGE of 60 kD under reducing conditions

CC and 120 kD under non-reducing conditions. The protein is adsorbed onto

CC cation-exchangers or heparin and its activity is lowered after 10 mins

CC at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90

CC deg.C. OCIF is useful in the control of bone resorption and therefore

CC in the treatment and prevention of disorders of bone resorption, e.g.

CC osteoporosis.

CC Sequence 360 AA:

Query Match 74.1%; Score 2119; DB 20; Length 360;

Best Local Similarity 89.9%; Pred. No. 6.78e-202;

Matches 339; Conservative 0; Mismatches 0; Indels 38; Gaps 1;

Db 22 etfppkylhnydeetsngllcdkcpptgylkqhtctakwktvcapcpdhyttsvhtsdecl 81  
 |||||||  
 QY 22 ETEPPKYLHNYDEETSHOLLCDKCPPTGYLKQHTCTAKWKTVCAPCPDHYTTSVHTSDECL 81  
 |||||||  
 Db 82 ycspvckelgyvkgccnrthrvce----- 105  
 |||||||  
 QY 82 YCSPVCKELGYVKGECDNRTHRVCECKEGRYLEIFCLKHSRSCPPGEGVVOAGTPERNVTV 141  
 |||||||  
 Db 106 --rppdggffsnetaskapcrkhtncsvfgllltqkgnathnlcsnsestqkcgldvtl 163  
 |||||||  
 QY 142 CKRCPDGFSSNETSSKAPCRKHTNCVSFGLLLTQKGNATHNICSNGNESRQKCGIDVTLL 201  
 |||||||  
 Db 164 ceaaftfapvptkftpnwlvsnlpgtkvnaesverikrghssqegqtfqllklykhnq 223  
 |||||||  
 QY 202 CEAAFFFAVPTKFTPNWLVSNLPGTKVNAESVERIKRGHSSOEGTFQLKLMKHON 261  
 |||||||  
 Db 224 kdgdlvkkllqgdllecnsvgrhghnaltfeqlrsmeslpgkkygaedtektlkackp 283  
 |||||||  
 QY 262 KDQDIYVKRIIODIDLCNSVQRHIGHANLTFEQLRSLMESLPGRKVGAEDEKTIKACKP 321  
 |||||||  
 Db 284 sddgllkllswrlkngdgtlkglmhalksktyhfpktvsgslkktlrflhsftmykly 343  
 |||||||

QY 322 SDQILKLLSLMRKNGDQTLKGLMHALKSKTYHFPKVTQSLKTRFLHSFTWYKLY 381  
 |||||||  
 Db 344 qklflemingvgsytkl 360  
 |||||||  
 QY 382 QKLFLEMIGNOVOSYK 398

RESULT 15

ID R9939 standard; Protein; 359 AA.

AC R9939;

DT 23-APR-1997 (first entry)

DE Mutated OCIF, OCIF-DCR4.

KW Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;

OS Osteoporosis.

OS Synthetic.

FT Key

FT Peptide

FT /note="Signal peptide"

FT Protein

FT /note="Mature OCIF-DCR4"

FT Misc.difference 143..144

FT /note="Position of deletion, delta 123-164"

PN W09626217-A1.

PD 28-AUG-1996.

PE 20-FEB-1996; J00374.

PR 20-FEB-1995; JP-054977.

PR 21-JUL-1995; JP-207508.

PA (SNOW) SNOW BRAND MILK PROD CO LTD.

PI Goto M, Higashio K, Kobayashi F, Mochizuki S, Morinaga T;

PI Nakagawa N, Shima N, Tsuda E, Ueda M, Yano K, Yasuda H;

DR WPI; 96-402320/40.

DR N-PSDB; T33169.

PT DNA encoding osteoclastogenesis inhibitory factor protein - useful

PT for bone resorption control, esp. treatment of osteoporosis

PS Claim 53, Page 111-113; 183pp; Japanese.

CC This sequence represents a mutated version of the full length

CC osteoclastogenesis inhibitory factor (OCIF) of the invention. This

CC sequence represents OCIF-DCR4 in which amino acids 123-164 of the

CC mature OCIF protein are deleted. The OCIF of the invention

CC has a molecular weight by SDS-PAGE of 60 kD under reducing conditions

CC and 120 kD under non-reducing conditions. The protein is adsorbed onto

CC cation-exchangers or heparin and its activity is lowered after 10 mins

CC at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90

CC deg.C. OCIF is useful in the control of bone resorption and therefore

CC in the treatment and prevention of disorders of bone resorption, e.g.

CC osteoporosis.

CC Sequence 359 AA:

Query Match 72.7%; Score 2079; DB 20; Length 359;

Best Local Similarity 88.7%; Pred. No. 9.12e-198;

Matches 337; Conservative 0; Mismatches 1; Indels 42; Gaps 1;

Db 22 etfppkylhnydeetsngllcdkcpptgylkqhtctakwktvcapcpdhyttsvhtsdecl 81  
 |||||||  
 QY 22 ETEPPKYLHNYDEETSHOLLCDKCPPTGYLKQHTCTAKWKTVCAPCPDHYTTSVHTSDECL 81  
 |||||||  
 Db 82 ycspvckelgyvkgccnrthrvce----- 141  
 |||||||  
 QY 82 YCSPVCKELGYVKGECDNRTHRVCECKEGRYLEIFCLKHSRSCPPGEGVVOAGTPERNVTV 141  
 |||||||  
 Db 142 ck-----sgnsestqkcgldvtl 159  
 |||||||  
 QY 142 CKRCPDGFSSNETSSKAPCRKHTNCVSFGLLLTQKGNATHNICSNGNESRQKCGIDVTLL 201  
 |||||||  
 Db 160 ceaaftfapvptkftpnwlvsnlpgtkvnaesverikrghssqegqtfqllklykhnq 219  
 |||||||  
 QY 202 CEAAFFFAVPTKFTPNWLVSNLPGTKVNAESVERIKRGHSSOEGTFQLKLMKHON 261  
 |||||||  
 Db 220 kdgdlvkkllqgdllecnsvgrhghnaltfeqlrsmeslpgkkygaedtektlkackp 279  
 |||||||  
 QY 262 KDQDIYVKRIIODIDLCNSVQRHIGHANLTFEQLRSLMESLPGRKVGAEDEKTIKACKP 321  
 |||||||  
 Db 280 sddgllkllswrlkngdgtlkglmhalksktyhfpktvsgslkktlrflhsftmykly 339  
 |||||||



QY	322	SDQILKLLSLMRKNGDPTLKGIMHAKHSHKTYHFPKVTQSLKKTIRFLHSFTWKLY	381
Db	340	qkIflemignvqsvkiscI	359
QY	382	QKLFLEMIGNVOYVKISCL	401

Search completed: Wed Aug 20 09:52:27 1997  
Job time : 64 secs.

**THIS PAGE BLANK (USPTO)**